

Application/Control Number: 10/686,315

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1. (original) A method of producing a multilevel electronic device comprising:

- 5 (a) providing a substrate of dielectric material having a set of surfaces;
- (b) machining into said substrate from a said surface, thereby creating a set of first indentations, at a first level;
- 10 (c) depositing conductive material into said first indentations to create a set of first conductive features;
- (d) substantially filling said first indentations with dielectric material;
- 15 (e) machining again into said substrate from a said surface, thereby creating a set of second indentations, at a second level; and
- 20 (f) depositing conductive material into said second indentations to create a set of second conductive features.

2. (currently amended) The method of claim 1, wherein step [(f)] (e) further includes machining, in at least one place, to said first level, thereby together with step [(g)] (f) constructing at least one electrical connection between said first set of conductive features and said second set of conductive features.

30 3. (original) The method of claim 1, further comprising:

- (a) machining again into said substrate and machining a via that intersects both a said first conductive feature

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and a said second conductive feature;
and

5 (b) depositing conductive material into
said via to electrically connect said
first conductive feature to said
second conductive feature.

4. (original) The method of claim 1, wherein
said first set of indentations and said second set of
10 indentations are both machined in from a single major
surface.

5. (original) The method of claim 1, wherein
said at least one major surface includes a first major
15 surface and a second major surface and wherein said first
set of indentations is machined in from said first major
surface and said second set of indentations is machined
in from said second major surface.

20 6. (original) The method of claim 1, wherein
said machining of said second level indentations includes
removal of some of said dielectric material.

7. (original) The method of claim 1, further
25 including, prior to step (b), the step of coating said
major surface of said substrate of dielectric material
with process-removable material, so that when step (b) is
performed said machining removes said process-removable
material at said first indentations.

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8. (original) The method of claim 1, wherein a
conductive seed layer is deposited over said major
surface by sputtering, but is removed everywhere but in

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said indentations by exposing said major surface of said substrate to a removal process.

9. (original) The method of claim 1, wherein
5 said step (d) includes filling said first indentations with liquid, curable material and then curing said liquid, curable material to form a filling of substantially solid, dielectric material.

10 10. (original) The method of claim 1, wherein said step (d) more specifically includes plasma depositing dielectric material into said first indentations.

15 11. (original) The method of claim 1, wherein said step (d) more specifically includes filling said first indentations with paralyne by way of sublimation.

20 12. (original) The method of claim 1, further including laminating said flexible multilevel electrical device to a second flexible electrical device, to form a new multilevel electrical device having an increased number of levels.